IN THE CLAIMS

1-4. (canceled)

5. (previously presented) The assembly according to Claim 12 wherein said inlet passage is positioned to discharge water from the suppression pool into said sump proximate said flow inlet side of said flow baffle.

6. (previously presented) The assembly according to Claim 9 wherein said inlet passage is substantially parallel to the floor.

7. (previously presented) The assembly according to Claim 12 wherein said outlet passage is positioned above said flow outlet side of said flow baffle.

8. (previously presented) The assembly according to Claim 9 wherein said outlet passage extends upwardly from said sump to the suppression pool.

9. (currently amended) An assembly comprising:

a containment vessel comprising a suppression pool, a drywell and a floor, said drywell comprising a sidewall extending upward from said floor, said sidewall separating said suppression pool from said drywell, said suppression pool, said drywell, and said drywell sidewall located inside said containment vessel;

a reactor pressure vessel installed inside said containment vessel;

a base grid disposed below said pressure vessel and spaced vertically above said floor of said containment vessel to define a sump therebetween;

an annular base grid shield wall extending vertically upward from said base grid, said base grid shield wall having a configuration comprising at least one of:

(a) said base grid shield wall spaced inwardly from said drywell sidewall to define an annular channel therebetween; and

(b) said base grid shield wall positioned adjacent said drywell sidewall;

at least one flow baffle in said sump;

an inlet flow channel extending through at least one of said annular channel providing flow communication between said drywell and said sump, and an inlet flow passage through said drywell sidewall providing flow communication between said sump and said suppression pool; and

an outlet flow channel extending through at least one of said annular channel providing flow communication between said sump and said drywell, and an outlet flow passage through said drywell sidewall providing flow communication between said sump and said suppression pool.

10. (original) The assembly according to Claim 9 wherein a substantially sinuous flow path is defined in said sump.

11. (original) The assembly according to Claim 9 wherein said at least one flow baffle includes a base end and a tip end, said base end having a larger cross-sectional area than said tip end.

12. (original) The assembly according to Claim 9 wherein said at least one flow baffle includes a flow inlet side and a flow outlet side.

13. (original) The assembly according to Claim 9 wherein said flow baffle has a partition extending upwardly therefrom and into said annular channel, said partition dividing said inlet flow channel from said outlet flow channel.

14. (original) The assembly according to Claim 9 wherein said inlet and outlet flow channels extend substantially parallel to each other.

15. (original) The assembly according to Claim 12 wherein said inlet flow channel provides flow communication for water from said drywell to said flow inlet side of said at least one flow baffle.

16. (previously presented) The assembly according to Claim 9 wherein said outlet flow channel provides flow communication for water from said sump to said drywell by convection.

17. (previously presented) A nuclear reactor comprising:

a primary containment comprising a floor;

a reactor pressure vessel located in said primary containment;

a drywell located in said primary containment, said drywell comprising a sidewall;

a suppression pool located in said primary containment, said suppression pool separated from said drywell by said drywell sidewall; and

a core catcher cooling system located in said primary containment and disposed below said reactor pressure vessel, said core catcher cooling system comprising:

a base grid having a top plate and a bottom plate, said base grid spaced vertically above said floor of said containment vessel to define a sump therebetween;

an annular base grid shield wall extending vertically upward from said base grid, said base grid shield wall having a configuration comprising at least one of:

(a) said base grid shield wall spaced inwardly from said drywell sidewall to define an annular channel therebetween; and

(b) said base grid shield wall positioned adjacent said drywell sidewall;

at least one flow baffle in said sump;

an inlet passage providing flow communication between said sump and at least one of said drywell and said suppression pool, said inlet flow channel extending through at least one of said annular channel and said drywell sidewall; and

an outlet passage providing flow communication between said sump and at least one of said drywell and said suppression pool, said outlet passage extending through at least one of said annular channel and said drywell sidewall, said inlet and outlet passages configured to circulate water between said sump and at least one of said drywell and said suppression pool by convection.

18. (previously presented) The nuclear reactor according to Claim 17 further comprising a substantially sinuous flow path defined in said sump.

19. (previously presented) The nuclear reactor according to Claim 17 wherein said flow baffle has a base end and a tip end, said base end having a larger cross-sectional area than said tip end.

20-24. (canceled)

25. (original) The nuclear reactor according to Claim 17 further comprising a cone coupled to said bottom plate.

26. (previously presented) The nuclear reactor according to Claim 17 wherein said at least one flow baffle includes a flow inlet side and a flow outlet side.

27. (previously presented) The nuclear reactor according to Claim 17 wherein said flow baffle has a partition extending upwardly therefrom and into said annular channel, said partition dividing said inlet flow channel from said outlet flow channel.

28. (previously presented) The nuclear reactor according to Claim 17 wherein said inlet and outlet flow passages extend substantially parallel to each other.